UNITED STATES
DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT
Fire and Aviation Directorate
National Interagency Fire Center
Lead Agency for the Joint Fire Science Program

Joint Fire Science Program

The Joint Fire Science Program provides funding for scientific studies to address problems associated with managing wildland fuels, fires, and fire-impacted ecosystems.

Department of the Interior and Related Agencies Appropriation Act for FY 1998 and subsequent years
(P.L. 105-83; H.R. Report 105-163)

PROJECT ANNOUNCEMENT No. FA-FON0015-0001
Primary Announcement (7 Task Statements)

CFDA No. 15.232
ISSUE DATE: September 12, 2014

JFSP Funding Opportunity Notice (FON) 2015-1

CLOSING DATE & TIME

November 21, 2014 5:00 p.m. MST

New for 2015:

- Changes in salary policy and equipment policy - see section **SECTION IV Application and submission information** for further information
- Changes in Budget and Budget Narrative requirements - see templates for changes
- Changes in review process - see **SECTION V Application and Review Process** for further information

Contact Information:

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SECTION I. FUNDING OPPORTUNITY DESCRIPTION

A. Legislative Authority: Department of the Interior and Related Agencies Appropriation Act for FY 1998 and subsequent years (P.L. 05-83; H.R. Report 105-163).

B. Project Background Information: The Joint Fire Science Program (JFSP) is a partnership of six federal wildland management and research agencies with a need to address problems associated with managing wildland fuels, fires, and fire-impacted ecosystems. The partnering agencies include the U.S. Department of Agriculture, Forest Service and five bureaus in the U.S. Department of the Interior: Bureau of Indian Affairs, Bureau of Land Management, National Park Service, Fish and Wildlife Service, and the Geological Survey.

For further background on the JFSP, those considering submitting proposals are encouraged to visit our website at www.firescience.gov

C. Program/Project Objective: The U.S. Congress directed the Department of the Interior and the USDA Forest Service to develop a Joint Fire Science Program and Plan to prioritize and provide sound scientific studies to support land management agencies. Current priorities are identified as task statements in the Funding Opportunity Notice (FON).

D. Statement of Joint Objectives/Project Management Plan: The JFSP Governing Board and Program Manager will establish an oversight relationship with the Principal Investigator on each funded project. Projects will be required, at a minimum, to provide a written progress report annually.

E. Period of Project: The JFSP Governing Board generally anticipates that individual projects can be accomplished within three years or less.

SECTION II. AWARD INFORMATION

A. Expected Number of Awards: Approximately 15-25

B. Estimated Total Program Funding: Approximately $6,000,000

C. Award Ceiling: None

D. Assistance Instrument: To be determined at a later date by the JFSP

SECTION III. ELIGIBILITY INFORMATION

A. Eligible Applicants: The JFSP encourages proposals from all interested parties. All selected awardees must provide a valid Dun & Bradstreet number (D&B) http://fedgov.dnb.com/webform and have a current registration with the federal System for Award Management (SAM) www.SAM.gov.

B. Funding Cooperator: JFSP will enter into only one agreement per project with the PI institution or the funding cooperator institution. The PI institution or funding cooperator institution will be responsible for entering into sub-agreements with collaborating institutions. Budgets must be reviewed and approved by your Budget contact and your Agreements contact prior to proposal submission. JFSP will not provide additional funds to cover budget errors discovered after the proposal submission deadline.

Funds will be awarded through a federal agency, a university, or a non-governmental organization (NGO). Proposals that included budgeted funds to be spent by a federal agency and that do not have a federal PI must list a funding cooperator from the federal agency

requesting funds. Similarly, proposals with a university or NGO PI that do not include funding for federal agencies do not need a funding cooperator and funds will route through the PI's institution.

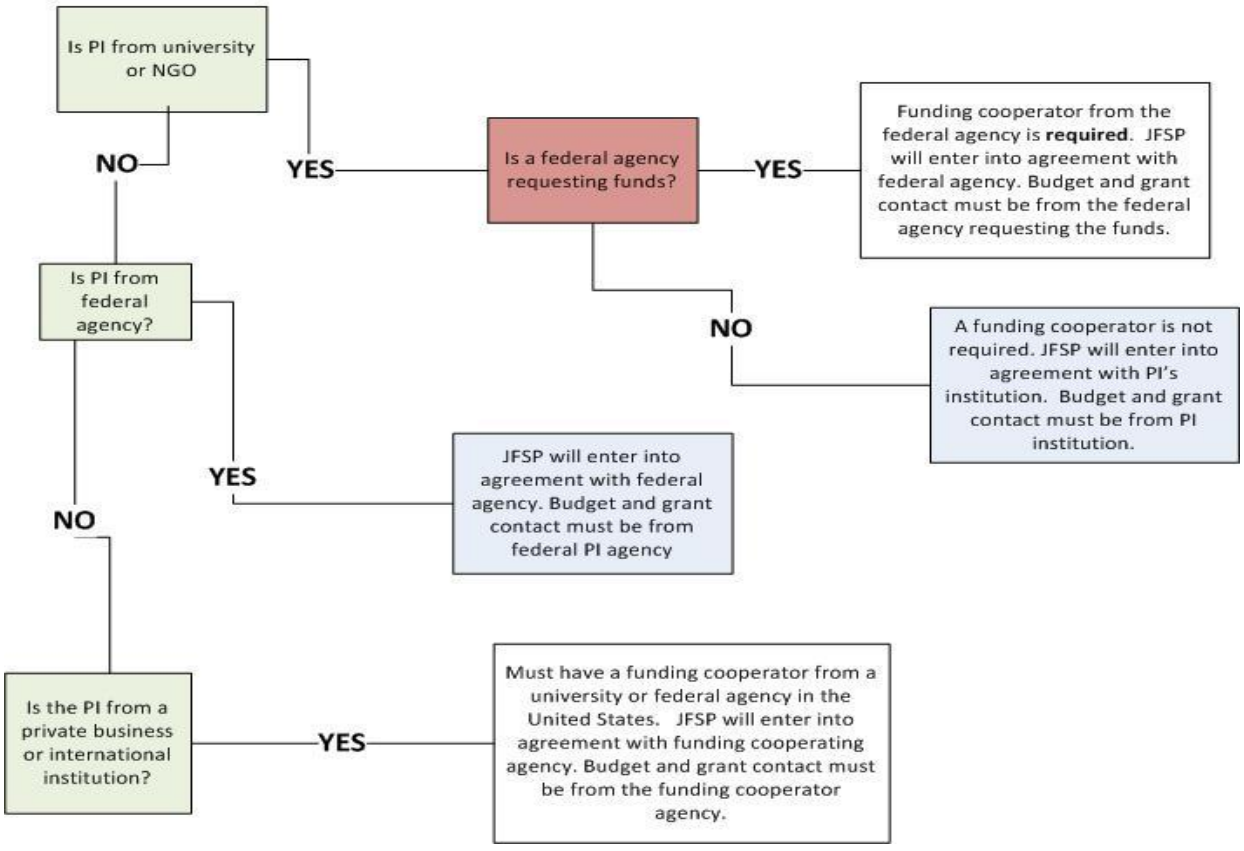
All proposals with a PI from other organizations, e.g., states or private business, or have any international funding, must also identify a funding cooperator from the United States to receive and process the funds. If the funding cooperator is from the Forest Service, the cooperator must be from a Forest Service research station. The Agreements contact and Budget contact must be from the funding cooperator's institution.

Proposals where the PI or funding cooperator is an employee of a university or NGO will be funded directly by an award document (e.g., a cooperative agreement) between JFSP and the PI's institution. The institution will be required to respond to a second non-competitive posting on grants.gov to initiate funding.

Upon receipt of a fully executed award document, the institution receiving funds from JFSP will be responsible for all sub-award transactions to cooperators or contractors related to the project. The end date and indirect costs for all sub-awards must match the end date and indirect costs in the original funding award document.

(See funding cooperator flowchart below)

Funding Cooperator Flowchart



C. Cost Sharing or Matching: This program has no matching requirements. However, contributed costs are desired and are an evaluation factor.

SECTION IV. APPLICATION AND SUBMISSION INFORMATION

A. Proposal Submission and Agency Contact

All proposals must be submitted by 5:00 p.m. MST November 21, 2014, using the electronic submission process provided on the JFSP website (www.firescience.gov). Proposals should not be submitted in Grants.gov. There will be no exceptions to this closing date and time.

All proposals must meet all requirements in this FON (see especially Section IV. E below). Proposals that do not meet all requirements in this section will not be considered for funding.

Questions should be directed to:

Administrative questions:
Becky Jenison, Administrative Analyst
Joint Fire Science Program
National Interagency Fire Center
3833 S Development Ave
Boise ID 83705
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Email: bjenison@blm.gov

Task statement questions:
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National Interagency Fire Center
3833 S Development Ave
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B. Steps to Create and Complete a JFSP Proposal

There are multiple steps necessary to create a JFSP proposal, some of which are dependent on prior steps. We recommend that investigators plan ahead, start early, and use the following process to create a proposal:

Step 1 – PI establishes profile, updates password

Step 2 – PI initiates proposal (select task, receive proposal #, enter proposal title)

Step 3 – Enter contacts (all contacts establish profiles, update passwords; PI assigns roles)

Step 4 – Investigators develop proposal (templates, requirements)

Step 5 – Complete budget (template, narrative)

Step 6 – Attach all documents (proposal, budget, budget narrative, data management plan, CVs, support letters (optional), salary justification (if needed))

Step 7 – PI enters final details (project location, budget summary, start/end dates, abstract, project category)

Step 8 – Budget Contact and Agreements Contact certify review of budget and budget narrative

Step 9 – PI submits proposal (convert to Final Draft status first if not previously done)

Notes

- Many steps can be in progress concurrently
- All information, including attachments, can be saved as Draft and edited later

C. Task Statement(s)

1. Fuels mapping for emissions inventories

The Joint Fire Science Program (JFSP) seeks proposals to reconcile tools currently used for national fuel mapping and emissions calculations. The objective of this task is to determine the most effective combination of fuel mapping and emissions calculation tools for the purpose of developing national or regional wildland fire emissions inventories for both wild and prescribed fires. Responsive research proposals should include assessments of the differences, similarities and trade-offs between fuel mapping tools as applied to emissions estimates; sensitivity analyses of factors influencing emissions; and field tests of mapping accuracy as applied to emissions estimates. The desired product of this research is a determination of the fuels mapping and emissions calculation tools that could be considered as best practices under differing circumstances relevant for emissions estimates.

Assessment of fuels mapping tools is limited to the specific application of developing emissions inventories. Proposals that request funds for other assessments of fuels mapping tools will not be considered.

Responsive proposals will include some or all of the following:

- Analysis of the differences and similarities in emissions estimated with various fuel loading tools used for building fire emissions inventories in the USA.
- A field test comparing observed fuel loading to estimates of fuel loading obtained from computational models. Field tests should include measurements from three or more geographically distinct locations representing differing fuels types.
- Assessment of how applications of fuel mapping systems may influence projections of fire combustion phases and how such influences may, in turn, influence smoke emissions estimates.

Comparative analyses can use either existing field data or new collected field data or a combination of both. Analyses should include a sensitivity analysis of which fuels factors inherent in each fuels mapping technique most influence differences in emissions calculations. Comparative analyses are also sought that evaluate the operational feasibility and costs of

implementing alternative approaches, including recommendations for regional or national implementation.

This solicitation is a component of the JFSP Smoke Science Plan (SSP; https://www.firescience.gov/documents/smoke/2010_JFSP_Smoke_Science_Plan_Final_Version_without_Appendix_B_1.0.pdf). Investigators should plan to participate with other SSP investigators, Cohesive Strategy working groups, smoke managers or regulators in various communication and coordination activities, such as conference calls, workshops or webinars.

2. Smoke hazard warning system

The Joint Fire Science Program (JFSP) is soliciting proposals to develop and demonstrate a prototype smoke hazard warning system that works in conjunction with information provided by existing and planned operational air pollution forecasting systems in the United States. The new smoke hazard warning system will reduce risk to the public from smoke by incorporating the most recent health-effects data and facilitating the incorporation of emerging results as they become available.

The smoke hazard warning system must be harmonized with existing tools, such as the EPA AQI (Air Quality Index) and its identified levels of warning, as well as NOAA's air quality forecasting capabilities. An additional source of information on public smoke hazard warning is the recently completed JFSP study on relationships between visual range, ambient particulate concentrations and health warnings (https://www.firescience.gov/projects/13-C-01-01/project/13-C-01-01_final_report.pdf). Proposed work should be coordinated with NOAA and EPA, since the final result will be shared with both agencies for their possible operational adoption.

Responsive proposals will include the following:

- Application and integration of the current NOAA/EPA air quality forecasting capability (http://www.nws.noaa.gov/ost/air_quality/)
- Compatibility with EPA's AQI and its application for public health warning (http://airnow.gov/index.cfm?action=aqibasics.aqi)
- Use of the most current data (nowcast and forecast) to estimate smoke emissions
- An evaluation of the utility of using estimates of visual range air quality forecasting to improve health warnings

Proposed work must deliver a prototype smoke hazard warning system. This system must include:

- Spatial presentation of forecast and 'nowcast' smoke concentration fields resulting from significant fire activities
- Display of AQI values within the airshed(s) affected by significant fire activities
- Provide 'nowcast' information in near real time and forecast information as soon as possible after it becomes available
- Allow expert interaction/override where smoke management experts are available to add local information

The prototype warning system can reside on an interim server, and is not expected to meet long-term federal agency hosting or security requirements. Additionally, smartphone applications and web-based research products to improve health warnings should be incorporated, as appropriate.

This solicitation is a component of the JFSP Smoke Science Plan (SSP; https://www.firescience.gov/documents/smoke/2010_JFSP_Smoke_Science_Plan_Final_Version_without_Appendix_B_1.0.pdf). Investigators should plan to participate with other SSP investigators, Cohesive Strategy working groups, smoke managers or regulators in various communication and coordination activities, such as conference calls, workshops or webinars.

3. Implications of changing fuels and fire regimes – selected regions

Land, resource and fire managers make investments and decisions on a daily basis that have long-term implications. Abundant evidence has documented that ecosystems are shifting due to climate change, invasive species, and altered disturbance regimes even though the science is unsettled on many important details of these changes. Management plans and activities often continue to assume that future ecosystems will look and function similar to existing or past ecosystems. Even where managers clearly see and understand that significant vegetation changes are underway, the long-term effects and effectiveness of fire management activities are often poorly understood, and it is unknown whether they contribute to resilient or desired future conditions. Managers in these changing landscapes do not typically have the time or available expertise to conduct the rigorous analyses of possible future scenarios that is required.

The Joint Fire Science Program (JFSP) Governing Board believes that existing and developing science is sufficient to broadly describe potential future ecosystems and their implications for fire and resource management. The Board invites interdisciplinary proposals that evaluate alternative future scenarios of ecosystem change to estimate indicators of changes in fuels and fire regimes in landscapes within and across selected regions (see below). Proposals must contain an assessment of the implications of changing fuels and fire regimes on manager's ability to meet land and resource management objectives, e.g., identification of potential tipping points beyond which attainment of certain management objectives is unlikely. Successful proposals will include a scientific assessment of changing fuels and fire regimes, and an assessment of likely management implications. Proposals must involve fire, fuels or resource managers in some manner.

While these changes are potentially important to most landscapes and regions, those landscapes where these changes are most evident and where wildfire risk is also escalating (e.g., increasing fire frequency and severity) are most likely to result in immediate impacts to ecosystems and society. Proposals submitted to address this task must address identified research questions in one or more of the following high-priority regions:

- Alaska
- California
- Great Basin
- South
- Southwest

Please refer to the JFSP Fire Exchange Network map (http://www.firescience.gov/) to determine regional boundaries applicable to this announcement. Depending on the success of this solicitation, JFSP may request proposals for other regions in future years.

The JFSP Governing Board encourages investigators to focus on changes to fuels and fire regimes that appear most likely to have significant management implications within the region(s) of interest.

Responsive proposals must address questions in both of the following topical areas:

- Changing fuels and fire regimes - How might fire regimes and fire effects shift across the region, and how might these changes affect fuels and fire management? How likely are these shifts? How might insect outbreaks change in frequency and severity across the region, and how might these changes affect fuels and fire?
- Implications for management programs - What are the implications for fuels treatment programs? What fuels treatment strategies are most likely to be successful in the long-term? What are the implications for post-fire restoration and rehabilitation? What post-fire restoration and rehabilitation strategies are most likely to be successful in the long-term?

The intent of this task is to synthesize current scientific understanding to estimate likely changes and trends over the next 20 years in fuels and fire regimes, and to forecast potential implications for management programs. The overall goal is to advise managers of likely long-term effects of current practices, suggest alternative approaches where warranted, and to examine adaptation and mitigation strategies. To meet this intent successful proposals will need to engage both scientists and managers. For example, scientists and managers could meet in a workshop format to define alternative scenarios and management practices; scientists could then estimate effects; and then scientists and managers could jointly interpret modeled results to provide a foundation for assessing current practices and making recommendations.

Involvement of the JFSP fire science exchange network (see www.firescience.gov) may prove beneficial to help plan and execute scientist-manager interactions. In addition, JFSP funded two proposals in 2013 (JFSP projects 13-1-01-4, and 13-1-01-16) to downscale climate change scenarios and estimate changes in fuels and fire regimes. Use of these data may provide a strong foundation for the scenario assessments called for in this task.

Referenced studies

13-1-01-4 - Estimating the Effects of Changing Climate on Fires and Consequences for U.S. Air Quality Using a Set of Global and Regional Climate Models - Jeffrey R. Pierce - Colorado State University

13-1-01-16 - Assessing the Impacts on Smoke, Fire and Air Quality Due to Changes in Climate, Fuel Loads, and Wildfire Activity Over the Southeastern U.S. - Uma X. Shankar - University of North Carolina-Chapel Hill

4. Fire ember production

Burning embers from wildland and structural fuels have been implicated in the destruction of nearby structures in the wildland urban interface (WUI). Yet, little is known about the rate and characteristics of ember production from various fuel types under different conditions. A better understanding of fire ember production is needed to validate fire behavior models and to inform appropriate WUI mitigation and fuel treatment strategies. For example, how can WUI fuel treatments be designed to minimize ember exposure to communities? What building and landscaping designs and materials are most resilient against ember rain? Such questions cannot be addressed without a better understanding of ember production from wildland and structural fuels in the WUI.

The JFSP seeks research that improves understanding of ember production from burning wildland and structural fuels in the WUI and the susceptibility of structures to burning embers. Through collection of fire ember data from laboratory, prescribed, and wildland fires, the JFSP is seeking proposals that address the following questions:

- What is the rate of ember production from burning wildland and structural fuels in the WUI under a range of environmental conditions? Are ember production rates related to commonly used environmental indices, e.g., Keetch Byram Drought Index, Haines Index, or the Energy Release Component.
- What is the characteristic size and shape of embers produced from burning wildland and structural fuels in the WUI under a range of environmental conditions?
- How far can embers of characteristic size and shape travel under a range of wind speeds?
- How long can embers of characteristic size and shape burn and at what intensities?
- What is the role of ember production from wildland and structural fuels in fire spread in the WUI?

The JFSP is particularly interested in data that is used to validate existing ember production and dispersal functions within fire behavior models, and projects that examine fires exhibiting high intensity or extreme behavior.

5. Fire effects on soil heating

Understanding the duration and extent of soil heating from prescribed fire and wildfire is vital to predicting many second-order fire effects, including development of soil hydrophobicity and mortality of buried seeds and roots which has direct bearing on post-fire recovery. Much advancement has been made in the development of process-based soil heating models which consider soil heating as a function of soil characteristics, fuel consumption, and moisture content. Some have been incorporated into software systems and are widely used by managers. However, their accuracy has not been sufficiently evaluated under a variety of burning, soil, and fuel conditions. In addition, the linkages of output from fire behavior models to soil heating to second-order fire effects have been poorly developed. Accurate assessments of soil heating may require development of new models that better incorporate the physical and chemical processes that occur during burning.

The Joint Fire Science Program (JFSP) seeks basic research on soil heating and second-order fire effects that result from elevated soil temperatures. Specifically, JFSP seeks proposals that:

- Uses existing or newly developed datasets from laboratory fires, prescribed fires or wildfires to evaluate existing soil heating models, or develop new models, under a variety of soil, fuel, and burning conditions, and
- Examines the effects of soil heating on second-order fire effects (e.g. hydrophobic soils, mortality of buried seeds, soil biota)

JFSP is particularly interested in studies that link output from fire behavior or fuel consumption models to soil heating. JFSP is also interested in studies that focus particularly on higher intensity fires that result in significant heat transfer to soils. Any new computational models or improvements to existing computational models must be evaluated against independent datasets.

New computational models, or improvements to existing models, should be delivered as well-documented modules for potential use in existing software integration frameworks (e.g., WFDSS, IFTDSS). Funding will not be provided for development of software applications.

6. Fire weather and decision making: a social and modelling analysis

Weather data are important for many fire and fuels management decisions since fire weather is a critical control on fire behavior and smoke dispersion. But how important is it? How do managers use fire weather information to make decisions? Will managers make different decisions if weather information has more or less uncertainty? If forecasts have a greater degree of confidence, will managers perceive that they have greater flexibility and make different decisions?

This task focuses on fire-related decision making and the use and importance of fire weather data. The JFSP Governing Board is specifically interested in resource allocation decisions based, in part, on fire danger forecasts; fuels and wildfire decisions based, in part, on fire behavior predictions; and, decisions related to smoke dispersion predictions. Sensitivity analyses of fire behavior, fire danger, or smoke dispersion models are appropriate to this task, but should be framed within the context of specific decision-making environments. Investigators should connect model sensitivity analyses with sensitivity analyses of manager's decisions, including use of social science to assess what fire weather information is needed and used by decision makers.

Proposals must address questions from both groups below:

- *Decision-making* - What weather information is used directly or indirectly in fire and fuels management decisions? What is the relative importance of weather information to decision-making? Are there weather information thresholds or tipping points that strongly influence fire and fuels management decisions?
- *Sensitivity analysis* – How important or sensitive are the outputs from fire danger, fire behavior and smoke dispersion models to input weather data resolution? What changes in weather values result in the greatest impact to fire danger and fire behavior outputs?

Proposals that link results from the sensitivity analysis to specific fire and fuels management decisions are requested. Recommendations regarding future weather data resolution are desired.

Results from funded studies are expected to inform future fire weather research priorities, improve fire and fuels management decisions, and to assist with weather station siting and maintenance decisions. Results that identify or evaluate potential thresholds or management trigger points (e.g., go or no-go burning decisions, pre-position decisions in operating plans) are desired.

7. Re-measurement – long - term fire effects on vegetation and fuels

The Joint Fire Science Program (JFSP) is seeking proposals to re-measure existing long-term (15 or more years post-fire) field studies of wildfire or prescribed fire effects on vegetation and fuels. A better understanding of long-term vegetation and fuels succession is needed to integrate management objectives for fire into ecosystem restoration and hazardous fuels projects, evaluate changes to ecosystem services, and to assess possible impacts related to climate change.

Responsive proposals should identify the management relevance of newly collected data. JFSP is particularly interested in new data that have applications in landscape or land management planning. For example, proposals could demonstrate the importance of new information used for successional modeling of vegetation or fuels; assess changes to ecological responses in areas of varying burn severity; or evaluate ecosystem changes related to drought. JFSP is interested in proposals over a range of ecosystems, fire regimes, and geographic areas.

Proposals must directly assess the successional patterns of vegetation and fuels following fire, and address at least one of the following questions:

- How do successional patterns vary temporally and spatially?
- How has climate change affected successional patterns?
- How have fires affected achievement of ecosystem restoration objectives?

Proposed work that does not address these questions will be considered outside the scope of requested work. Proposals must be for re-measurements that are 15 or more years post fire.

Proposals requesting funds to re-measure variables other than vegetation and fuels will not be considered. Proposals requesting funds to re-measure variables not previously measured will not be considered.

For comparison purposes, proposals may include funding for re-measurement of non-fire and control treatments when part of the original study design.

Proposals must respond to a need to re-measure variables that will not otherwise be re-measured as part of a regular, ongoing measurement program, and must clearly state the added value to be obtained from re-measurement.

Proposals must include evidence that the plots can be relocated and have not been disturbed since the last measurement in any way that could substantially affect the validity of the results, e.g., by management treatments.

Proposals must clearly describe the extent, format, and quality of the available pre-existing data, and describe the sampling design under which these data were collected. Proposals will only be considered if the experimental design, measurement methodology, data and results for the prior measurement(s) have been published as a scientific manuscript, or documented to an equivalent extent. Publications or equivalent documentation must be referenced and attached to the proposal. Proposals must describe the analysis methodology intended for comparison of pre-existing and newly collected data in sufficient detail to allow for an independent assessment of statistical methods. Proposals must also describe how data will be combined for comparative analysis.

Proposals should include funding to ensure that both pre-existing and newly collected data will be archived and documented in a publicly accessible repository (see data management plan requirements).

D. Budget and Funding Policy

1. Funding Cooperator

Proposal may require a funding cooperator. See Section III.B above.

2. Indirect Costs

The JFSP Governing Board recognizes the need of agencies and organizations participating in the program to recover reasonable indirect costs. However, cost effectiveness of the individual projects is a determining factor in the final selection process. Indirect rates for JFSP proposals are limited to a maximum of twenty (20) percent of the direct costs for each institution. The maximum indirect rate that a funding cooperating institution may charge for pass-through costs is ten (10) percent. Proposals requesting funds for indirect rates higher than twenty (20) percent will not be considered. Proposal funding through a federal funding cooperator must reflect either the prevailing indirect rate for the cooperating federal agency or the JFSP maximum limit of twenty (20) percent, whichever is less. Unrecovered indirect costs can be used as contributed funds in the budget.

Pass-through costs are charged only by the PI institution or funding cooperator institution for administrative costs associated with managing sub-agreements. Pass-through costs are limited to ten (10) percent of the sub-agreement direct charges.

(See indirect cost example below)

Indirect costs example

Scenario

- The PI is from a university or federal agency (lead institution)
- Co-PI is from a cooperating university or NGO (cooperating institution)

- The calculated expenses in the Budget for the lead institution are $200,000 (salary, fringe benefits, travel, equipment, etc.)
- The calculated expenses in the Budget for the cooperating institution are $40,000

Calculation of indirect costs

1. Cooperating institution

Maximum allowed indirect costs (20%)

$40,000 * 0.20 = $8,000

Total Budget for cooperating institution

$40,000 + $8,000 = $48,000

Note: If there are multiple cooperating institutions this calculation would be performed for each institution.

2. Lead institution

Maximum allowed indirect costs (20%) on own Budget

$200,000 * 0.20 = $40,000

Maximum allowed pass-through indirect costs (10%) on cooperating institution Budget

$48,000 * 0.10 = $4,800

Total Budget for lead institution

$200,000 + $40,000 + $4,800= $244,800

3. Total Budget = $244,800 + $48,000 = $292,800

Points of emphasis

- Lead institutions can include pass-through costs for each cooperating institution in their Budget
- Pass-through costs are calculated based on the total Budget for each cooperating institution, including the indirect costs calculated by the cooperating institution
- Cooperating institutions do not include pass-through costs in their Budgets
- Institutions should use their negotiated indirect cost rates with their cooperating institutions, but cannot exceed JFSP maximums

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3. SBIR Costs

Certain proposals may be required to pay a percentage of the project's costs into the Small Business Innovation Research (SBIR) program. Proposals where the funds are transferred to a Forest Service institution and subsequently award a portion of the total budget to a non-federal entity through a sub-agreement or sub-contract may be required to pay the prevailing rate of the total funds awarded externally to the SBIR program. Check with your Agreements contact to determine if this applies to your proposal and to determine the current rate.

4. Equipment Policy

Investigators are encouraged to contribute equipment to conduct studies funded by JFSP from existing equipment inventories. Contributed equipment should be included as "contributed costs" in JFSP budget spreadsheets and on the budget tab.

If necessary equipment is not available, JFSP will partially or fully fund equipment needed to conduct research funded by JFSP. If newly purchased equipment has an expected lifespan extending beyond the life of the project, the owner of the equipment is expected to contribute a portion of the purchased equipment costs in approximate proportion to the remaining lifespan. E.g., if a needed piece of equipment costs $1,000 and will have a 50% lifespan at the end of the project, then the owner of the equipment is expected to contribute $500.

In no case will JFSP pay more than $5,000 for a piece of equipment. If a new piece of equipment costing more than $5,000 is needed for the proposed project, proposal investigators are expected to contribute the remaining costs in excess of $5,000.

This criterion is to be applied for each and every piece of equipment.

5. Salary Policy

Salaries of permanent full-time employees are not covered by JFSP and must be provided by your institution. This includes university faculty on 12-month tenure-track appointments.

JFSP will provide funding for part-time, temporary, term employees, post-doctoral employees, graduate, or undergraduate students. JFSP will cover salary for employees on a 9-month appointment, but only for the months they are not funded by their institution and only for the time focused on their JFSP project. JFSP will not pay salary for other personnel to fill in for employees working on a JFSP project.

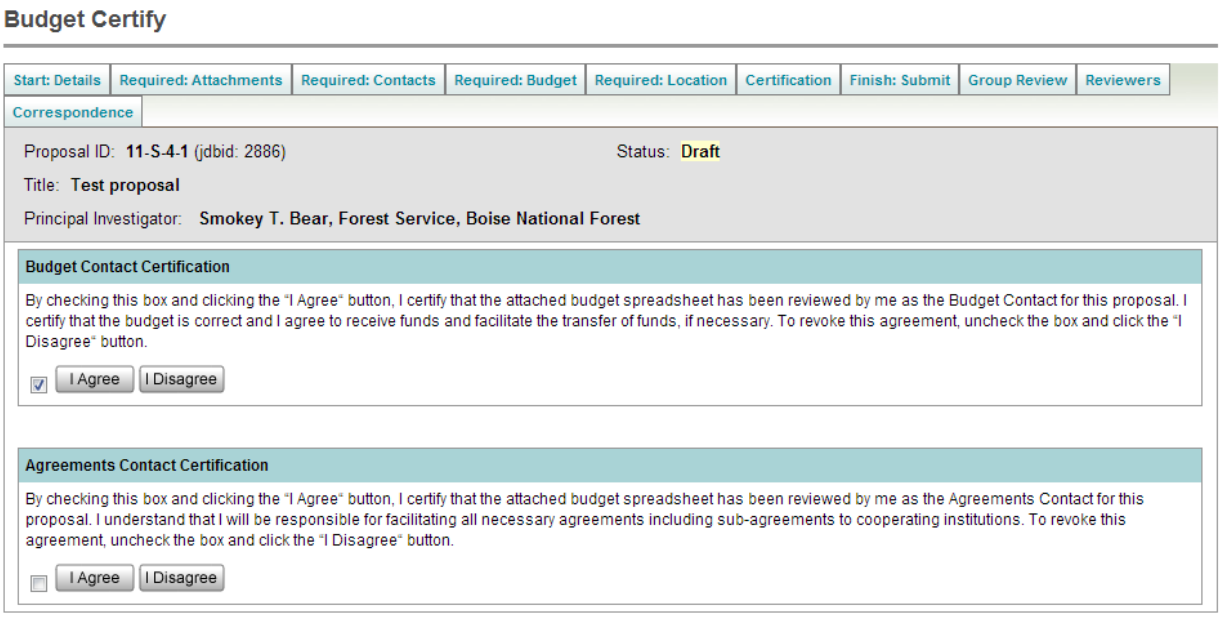
Stipends are normally funded, but **tuition and other university fees will not be funded**.

6. Budget

Budget spreadsheet and narrative must be reviewed by your Budget contact and your Agreements contact to ensure all costs have been included and the budget is correct including indirect charges. JFSP will not provide additional funds to cover errors discovered after the proposal submission deadline.

Budget spreadsheet must use the provided template and have a separate worksheet for each institution requesting or contributing funds including contracts. Budget narratives must detail all costs in the budget spreadsheet. Funded proposals will be closely scrutinized for allowable and reasonable costs before award is issued.

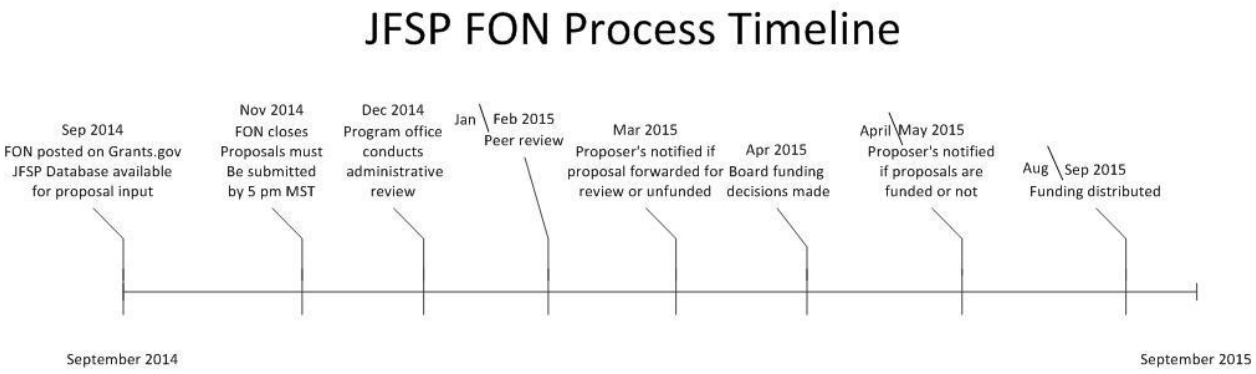
The Budget contact and Agreements contact must sign in to the JFSP system and certify the budget is correct and they understand their role in receiving funds and facilitating agreements. Proposals cannot be submitted by the PI if both contacts have not completed this task in the database. (**See screen print below**)



Proposals will be funded via Inter-agency agreement, cooperative agreement, or budget transfer. Please talk to your Budget contact and Agreements contact to ensure your budget has the correct indirect rates for your circumstances.

The JFSP Governing Board does not fund projects that are, or should be, funded internally from existing accounts (such as routine agency monitoring) or operational portions (such as the installation of fuels treatments or development of fire management plans) of other projects.

Funding is usually distributed in late summer; please plan budgets accordingly (**See proposal timeline below**).



E. Data Management Plan (DMP)

It is the intent of JFSP that all data collected or generated through JFSP funds are of high quality and made freely available to others within a reasonable time period. JFSP recognizes

that preparation of data and metadata for publication is a time consuming process. Adequate funds to support this work should be included in proposal budgets.

DMPs must be attached as a separate document and are limited to two pages maximum. DMPs will be considered in the proposal review process.

DMPs must contain the following (see DMP template and instructions for further detail):

- Description of data type, scale, resolution, and format for all data to be submitted to a data repository
- Steps used to process and quality assure the data
- Specific data repository intended for long-term data storage
- Metadata language used to describe the data
- Provisions for data access and necessary limitations to protect sensitive data
- For modeling studies, only data generated for model input should be included in the DMP.

All collected or generated data should be evaluated for errors, and subjected to data proofing and validation procedures.

Investigators must select a data repository well suited for long-term archival, publication, and data sharing of data collected or generated through JFSP funding. JFSP recommends use of the Forest Service R&D data archive (http://www.fs.usda.gov/rds/archive/). If you would like to discuss the archive's services, please contact archivist Dave Rugg (drugg@fs.fed.us) or associate archivist Laurie Porth (lporth@fs.fed.us).

Submission of data sets and metadata will be required at the time of final report submission. JFSP will review the data and metadata to ensure that all required information is provided (including a pointer in the metadata to the location of the data). After successful review, the metadata will be provided to the Forest Service R&D data archive (http://www.fs.usda.gov/rds/archive/), which will provide the central metadata catalog for all JFSP projects. The PI is responsible for keeping the metadata in the official catalog current over time.

PIs can limit release of data sets for up to two years following submission of the final report. At the end of this period, all data sets will be made publicly available. All extensions of this deadline require extenuating circumstances and approval by the JFSP Program Manager.

F. Additional Application Requirements

Proposals must meet all of the following requirements to be considered. Incomplete proposals will not be considered. There will be no exceptions to either the submission deadline or other submission requirements. If you have questions about these requirements, please contact the JFSP Program Office for clarification (Becky Jenison 208-387-5958, or John Cissel 208-387-5349).

1. Proposal Submission

Proposals must be submitted electronically via the JFSP website (www.firescience.gov). Proposals should not be submitted in Grants.gov. Hard copy, email, or facsimile proposals will not be accepted. Proposals can be created in the database at any time and saved for submission any time prior to the closing date & time.

- Proposers must have a JFSP database login and password to submit a proposal. Requests for access will be processed in approximately 24 hours.
- The Budget contact must sign into the system and certify the budget is correct before proposal can be submitted. Note that the PI will not be able to complete this task for the Budget contact. PI must assign this contact on the contact tab before the Budget contact can sign in to complete this process.
- The Agreements contact must sign into the system and certify the budget is correct before proposal can be submitted. Note that the PI will not be able to complete this task for the Agreements contact. PI must assign this contact on the contact tab before the Agreements contact can sign in to complete this process.
- Only the PI can submit the proposal.
- Proposals can be saved in the JFSP system and submitted prior to the closing date and time. Submitted proposals can be reverted back to final draft by the PI prior to the closing date. If you revert a proposal back to draft you must resubmit the proposal before the closing date and time.
- The JFSP proposal submittal system will not allow proposals to be submitted after the closing date and time.

2. Profiles

- **All** contacts must have a profile in the JFSP database and must be entered on the contacts tab.
- Proposals cannot be submitted if all required contacts (see Contacts below) are not entered on the contacts tab by the PI.
- It can take up to 24 hours to get a profile created. It is advisable to request profiles early in the process.
- To request a profile or password resets go to the JFSP website and click on the sign in link. Use the appropriate link for requesting a password reset or requesting a new user registration.

3. Contacts

Proposals may be required to have the following contacts (see Section VI. Definitions to understand the role of each contact) assigned to a proposal:

- Principal Investigator (required, only one Principal Investigator can be assigned)
- Funding Cooperator (may be required, see Section III.B. funding cooperator)
- Budget Contact (required) in some cases this may be the same as the Agreements contact
- Agreements Contact (required) in some cases this may be the same as the Budget Contact
- Co-PIs and Collaborators (options)

It is the PI's responsibility to ensure all correct contacts are entered into the proposal database. Please read Section VI. Definitions carefully to ensure you have the correct contact from the correct institution listed.

4. **Confirmation Page**
   When you submit your proposal you will receive a confirmation page. We highly recommend that you save or print this page for your records. If you do not receive this confirmation page you have not submitted your proposal correctly.

   You should receive an email from the JFSP Program Office letting you know that your proposal has either been forwarded for review, or rejected for not meeting administrative requirements. If you do not receive this email by the end of December, you should fax or email your confirmation to Becky Jenison at bjenison@blm.gov or fax: 208-387-5960.

5. **Attachments**
   All required documents and templates must be attached before the proposal can be submitted. All attachments except the budget must be attached as a pdf document; the budget template is in an Excel format. Attachments over the page limit cannot be submitted. All information in a template must be included as part of that attachment and must be within the page limit. Extraneous materials (e.g., extra graphs and text) are not permitted and will not be reviewed.

   Required attachments for all proposals must use templates provided to be considered:
   - Proposal body
   - C.V.s (PI: two-page maximum, Co-PI(s): one-page maximum)
   - Budget spreadsheet (Excel spreadsheet, includes a separate worksheet for each institution requesting funding)
   - Budget narrative (explanation of specific budget assumptions and costs)
   - Data Management Plan (see below)

   Additional attachments:
   - Letter(s) of support (optional, but recommended)
   - Specific to a task statement (check the applicable task statement for additional requirements)

6. **Data Management Plan**
   All proposals are required to submit a Data Management Plan (DMP) using the instructions, template, and example provided (See Section IV. D above).

7. **Budget**
8. Budget summary numbers summarized by institution type requesting funds must be input in the JFSP database on the Budget tab. The budget spreadsheet must be attached on the attachments tab using the spreadsheet template provided. Proposals cannot be submitted without completing these required fields and attachments. Do not edit spreadsheet formulas and formatting without contacting Becky Jenison first (bjenison@blm.gov).

9. **Task Statement Intent**
   Proposals that do not clearly and directly meet the intent of the task statement selected will not be reviewed or considered for funding. Please make sure you are submitting your proposal for the correct task statement.

10. Format

Proposals not following the required template(s) will not be considered. Proposals must use an 11 point font or larger. Additional guidance is included in the beginning of each template.

11. Page Limits

Attachments exceeding the page limit cannot be submitted. Page limits may vary by task statement and attachment; check the page limit in the template and JFSP database for each specific task statement. Everything in the template is included in the page limit.

12. Project Location

Project location fields must be completed on the location tab for a proposal to be successfully submitted. Instructions are listed on the project location tab.

13. Signatures

Handwritten signatures are not required. When Principal Investigators (PIs) submit proposals they will be prompted to input their password. By typing in the password and submitting a proposal, PIs are certifying that all contacts on the proposal have reviewed the proposal and understand what their role requires.

14. Indirect Costs

Proposals must follow JFSP indirect cost guidelines. (See Section III. B above)

15. Contributed Costs

See Section III. C above.

16. Support Letters

Support letters are encouraged, but not required. Support letters are useful if they show understanding of the proposed work and the author articulates how the work will benefit them. Support letters that appear to be ghost-written by the PI or are form letters are much less useful. If submitted, letters must be combined into one pdf document and attached on the attachments tab. Support letters sent by hard copy or email directly to JFSP will not be considered.

17. Past-Due Projects

No proposals will be considered if the work includes a PI or Co-PI who is a PI or Co-PI on a JFSP project that is past due as of the closing date of this announcement. See the JFSP website for the complete JFSP past-due and extension request policy.

SECTION V. APPLICATION REVIEW AND EVALUATION

Overview

Proposals will be reviewed in four stages:

1. JFSP Program Office – Administrative requirements and task statement intent
2. Peer Review – Relevancy, technical merit, products, and feasibility
3. Governing Board Review – Funding decisions
4. Statistical Review (optional) – Adequacy of study design and analysis methods

Note: All proposals are expected to be directly and clearly responsive to the task statement questions. Proposals that are not sufficiently responsive, as judged by the Joint Fire Science Program, will not be reviewed.

Review Criteria
Note: Review criteria are not arithmetically scored or weighted. However, applicants should note that the technical merit criterion is given particular attention. Proposals that do not receive strong technical merit reviews are unlikely to be funded.

Task statement responsiveness
- Does the proposal directly address the task statement?
- Are there significant elements of the proposal that are off-task?
- Will the intended results be useful to a broad cross-section of the fire, fuels, and resource management community?

Technical merit
- Does the proposal address scientifically important questions?
- Are objectives, questions and hypotheses clearly articulated?
- Can the questions or hypotheses be answered with the proposed design and analysis?
- Are the methods sufficiently rigorous to produce credible results?

Deliverables and science application
- Are there important and useful applications and deliverables described in the proposal?
- Is the scope and scale of planned applications and deliverables sufficient to have meaningful impact?
- Is there a sufficient plan to exchange results with relevant audiences?
- Where relevant, is there evidence that investigators have collaborated with the JFSP Fire Exchange Network to develop science delivery plans?

Budget
- Is the requested budget reasonable and realistic for the scope and scale of the proposed work?
- Does the proposal budget contain substantial contributed costs?
- Does the budget narrative provide sufficient explanation and justification for the requested budget?

Feasibility
- Does the project team have the skills and qualifications to execute the proposed work?
- Is the schedule reasonable?
- Have all likely barriers been identified and mitigated?
- Have managers been involved where appropriate?
- Is the probability of success high?

SECTION VI. DEFINITIONS

Funding Opportunity Notice (FON): The official label for the Joint Fire Science Program method of requesting project proposals. The FON includes task statements for which proposals are sought, instructions for proposal submission, and related information.

Principal Investigator (PI): The individual identified in a proposal who is the research lead for the project. This individual is responsible for coordinating all research related activities and will be the primary science contact for the project. In addition the PI is responsible for communicating and coordinating with Co-PIs and others on the research team. The PI is responsible to JFSP for completion of the project.

Funding Cooperator: The funding cooperator receives funds from JFSP and is responsible for distributing funds to other cooperators. A funding cooperator is only required if the PI is non-federal and a federal institution is requesting funding, or if the work is being completed through a private business, or requests international funding. The funding cooperator is responsible for coordinating with the PI, the Agreements contact, and the Budget contact on administrative activities for this project. The funding cooperator will be one of the primary contacts for the project and should stay informed and involved in project activities. If a federal agency is requesting funds the funding cooperator must be from the federal cooperating agency.

Budget Contact: Budget contact must be from the institution receiving funds from JFSP. This person is responsible for ensuring the budget details are correct prior to proposal being submitted and agrees to receive funds and facilitate the transfer of funds, if necessary. Budget contact must be from the institution receiving funds from JFSP. If a federal agency is requesting funds the Budget contact must be from the federal cooperating agency.

Agreements Contact: Person from institution receiving funds from JFSP that is responsible for facilitating the receipt of funds and the execution of any agreements or contracts necessary for a proposal if it is selected for funding. If a federal agency is requesting funds the Agreements contact must be from the federal cooperating agency.

Co-Principal Investigator (Co-PI): The individual(s) identified in a proposal who will work with the research lead on the project and makes a substantial contribution to the project. Co-PIs are responsible for communicating and coordinating with the PI.

Collaborator/Contributor: An individual that advises investigators, but is not involved at a level expected of a Co-Principal Investigator. For example, a collaborator may make recommendations on how best to involve fire and fuels managers in a project, or consult regarding the statistical design of a study. Individuals that serve as an author or co-author of a manuscript for a scientific journal are normally a Co-Principal Investigator.

Student Investigator (relevant to the GRIN announcement only): A current student with an approved dissertation or thesis plan responsible for leading and delivering the research proposed in a GRIN proposal.

Indirect Costs: Those costs used to pay for overhead/administrative costs attributable to a specific research project. Examples include the costs of operations and maintenance such as janitorial, phone, and clerical services. The Joint Fire Science Program recognizes two types of indirect costs: 1) "in-house" costs incurred by the agency, institution, or unit requesting funds; and 2) Pass-through costs are charged only by the PI institution or funding cooperator institution for administrative costs associated with managing sub-agreements. Pass-through costs are limited to ten (10) percent of the sub-agreement direct charges.

Joint Fire Science Program Governing Board: An appointed 12-person Board representing the JFSP partnering agencies. The Board provides strategic direction and oversight to JFSP, identifies important research questions, selects proposals for funding, supervises the JFSP Program Manager, and conducts related business.

Science Exchange and Application: The exchange of information, materials, models and other research deliverables to end users, along with adequate information and training to apply the deliverables. Examples of active methods include workshops, training sessions, guided field tours, conferences, meetings, and symposia. Examples of passive methods include published papers and websites. A combination of active and passive methods is preferred. Collaboration with the JFSP Fire Exchange Network is recommended.

Task Statement: A specific area of interest identified in the FON, for which project applications are sought.